organs in the appendages of the body are like those over the sense organs of Lumbricus. Over the body itself each cuticular marking is concave on the exterior and the very thick cuticula encloses beneath each marking an ovoid cavity through which pass the outer ends of the sensory cells. Each sensory cell usually bears several sensory hairs, and these hairs cannot be retracted normally as supposed by Retzius.

In the gill lobes of the parapodia, the base of the palps, the prostomium and several anterior metameres is found a second kind of sense organ, apparently a light-perceiving organ, not previously described.

In the center of each organ is a slender, flexible tube, open to the exterior and continuous with the cuticula. Around this tube the club-shaped peripheral ends of 100 or more bi- or multipolar nerve cells are arranged in a spiral of from 8 to 14 turns. The bodies of these cells are irregularly grouped in or beneath the base of the epidermis; the central nerve fibre passes to the central nervous system; the peripheral fibre is at first slender, but ends in the club-shaped enlargement mentioned above. The tip of this enlargement, and sometimes the entire enlargement itself, is filled with a clear, highly refractive, lens-like substance.

The central fibres from both diffuse and light-perceiving organs end in *apparent* nerve baskets around the ganglion cells of the central nervous system.

Beside the four eyes and the two pairs of sense organs of unknown function described by Retzius, the prostomium contains a third pair of organs near the anterior pair of Retzius. The groups of ganglion cells described by Retzius near the anterior eyes are not, as that author supposed probable, concerned with the innervation of the eyes; the preparations from which this study was made show plainly the nerve bundles passing from the eyes to the brain.

Epidermal Sense Organs in Certain Polychætes. Margaret Lewis.

The epidermal sense organs were studied in two members of the annelid family of the Maldaniæ, both by means of ordinary methods and by the use of methylin blue. The following are the chief conclusions:

1. That multicellular sense organs are present throughout the integument of the two polychæte annelids *Clymenella torquata* and *Clymene longa*.

2. That the cells of these sense organs are spindle-shaped, bipolar nerve cells.

3. That the individual cells making up a sense organ show great variation in the distance of the enlargement containing the nucleus from the cuticula. This enlargement may be close to the cuticula, at half the height of the epidermis or sunk to the base of the epidermis.

4. That the cells of the sense organs possess at their peripheral ends sensory hairs.

5. That from the deep end of each cell proceeds one process which turns at an angle beneath the epidermis toward the central nervous system.

6. That in many respects the sensory cells of these epidermal sense organs show a striking resemblance to the epidermal sense cells which Retzius describes for *Nereis;* the chief difference being that Retzius found only isolated sense cells in the epidermis of *Nereis*, whereas in these Maldanids these sense cells without exception are grouped into definite sense organs.

The Eyes of Limax maximus. A. P. Henchman.

The eye consists of six parts: (1) Optic ganglion, (2) Sclerotic capsule, (3) Retina, (4) Vitreous humor, (5) Lens, and (6) Corneal layer. The optic ganglion is a funnel-shaped enlargement of the optic nerve, containing oval nuclei. The sclerotic capsule is a thin, firm layer of connective tissue, containing at intervals oval